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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,875	06/03/2005	Klaus Peter Schwung	121059	4964
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EXAMINER				
SYKES, ALTREV C				
ART UNIT		PAPER NUMBER		
1794				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/509,875

Applicant(s)

SCHWUNG ET AL.

Examiner

ALTREV C. SYKES

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 12-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pg. 2, filed May 18, 2009, with respect to claims 1-5 and 12 rejected under 35 U.S.C. 103(a) over Shue et al. et al. (US 4,489,129) in view of Harris (US 4,910,289) have been fully considered. Examiner is persuaded that there is no suggestion to combine the references. Arguments to that respective nature are deemed moot at this time. Therefore, the rejections have been withdrawn along with the finality of the last mailed office action. However, upon further consideration, a new ground(s) of rejection is made in view of a new interpretation of each reference separately.

Applicants recite that claim 1 requires that "a proportion of polyphenylene sulfide relative to the reinforcing fibers is 0.001 to 0.01 percent by weight." As acknowledged by the Office Action on page 8, Shue et al. does not teach or suggest such a feature.

Examiner is not persuaded. Shue et al. discloses a coating for reinforcing fibers which would later be incorporated in suitable plastics including thermoplastics. (See Col 1, lines 4-10 and 49-56) Shue et al. discloses poly(phenylene sulfide) is the preferred polymer. (See Col 2, lines 49-61) Shue et al. further discloses that the amount of polymer coating on the reinforcement after curing can vary widely. The invention is not limited thereto but it is contemplated that *for most purposes* the weight percentage of polymer coating will range from *about* 0.1 to about 10 weight percent. (See Col 3, lines 20-24 *emphasis added*) Therefore, examiner finds that there is sufficient suggestion in Shue et al. to modify the amount of polymer coating on the reinforcements. Shue et al. further discloses because of its availability and desirable properties (such as high

chemical resistance, nonflammability, and high strength and hardness) poly(phenylene sulfide) is presently preferred. (See Col 4, lines 1-5) Therefore, one of ordinary skill in the art would have been easily motivated by the list of known properties and availability of poly(phenylene sulfide) to modify the amount used on the reinforcements in order to tailor the reinforcements for end product use.

Applicant argues Harris discloses a proportion of PPS relative to the miscible poly(aryl ether ketone) blend is 0.1 to 2 percent by weight. However, claim 1 recites the proportion of PPS relative to the reinforcing fibers. Nowhere does Harris teach or suggest any amounts of less than 0.1 wt% of PPS relative to reinforcing fibers. Thus, Harris cannot be reasonably considered to teach or suggest an amount of 0.001 to 0.01 wt% of PPS relative to the reinforcing fibers. Therefore, the applied reference fails to teach or to have rendered obvious, or establish any reason or rationale to provide "a proportion of polyphenylene sulfide relative to the reinforcing fibers is 0.001 to 0.01 percent by weight," as recited in claim 1. Applicant argues the rejection of claims 13-16 under 35 U.S.C. 103(a) over Harris (US 4,910,289) citing that Harris is silent as to any amount of fibers used in the composition and does not teach or otherwise suggest any ratio of weight percent of PPS to reinforcing fibers.

Examiner agrees that the proportion of PPS disclosed by Harris is relative to the miscible ketone polymer and not the reinforcing fibers. However, while there is not an explicit amount of PPS taught relative to the reinforcing fibers, examiner has sufficient reason to believe that one of ordinary skill in the art would have been easily motivated to optimize the amount of reinforcing fibers included in the compositions thereby naturally

tailoring the PPS relative to the reinforcing. One of ordinary skill in the art would have been motivated by manufacturing requirements for end product use of the composition to optimize the reinforcing fiber amount. Harris discloses the blend of poly(aryl ether ketone) and PPS may be fabricated into a coating or moulding. The blends may be fabricated into any desired shape and are particularly desirable for use as electrical insulation for electrical conductors. (See Col 22, lines 42-46) Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

2. For the reasons set forth above, applicants' request for rejoinder is denied. The expression special technical features is defined as meaning those technical features that define the contribution which each claimed invention, considered as a whole, makes over the prior art." MPEP 1893.03(d) As such, and as evidenced by the prima facie cases of obviousness taught by Shue et al. et al. (US 4,489,129) and additionally Harris (US 4,910,289) there is not a contribution over the prior art for the recited single inventive concept as acknowledged by Applicant. Examiner notes that each of the references provide for a prima case of obviousness for the claimed range of applicant as discussed above and further elaborated below. While it is noted that the small amount of PPS as a coating for fibers was directed at increasing interlaminar shear strength and bending strength of composites containing the fibers as recited by applicant in the remarks and specification, applicant is reminded that it is well settled that "the fact that appellant has recognized another advantage which would flow naturally from following the suggestion

of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.” *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd.Pat. App. & Inter. 1985). Therefore, it has been well settled that the recitation of an additional advantage associated with doing what the prior art suggests does not lend patentability to an otherwise unpatentable invention. See MPEP 2145.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-5 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shue et al. et al. (US 4,489,129) and the Merriam-Webster Online Dictionary.

Regarding claims 1, 2, 4, 5, 13, 14, and 16 Shue et al. discloses a coating for reinforcing fibers which would later be incorporated in suitable plastics including thermoplastics. (See Col 1, lines 4-10 and 49-56) Regarding the limitation of a composite material, examiner notes that the Merriam-Webster Online Dictionary defines

a composite as being made up of distinct parts. Therefore, the distinct parts of a polymer coating on a reinforcing fiber meets the limitation of applicant. Shue et al. discloses the polymer can be a homopolymers, copolymer, terpolymers or the like. The polymer can also be a blend of such polymers. Suitable polymers include, but are not limited to, poly(arylene sulfide) polymers. (see Col 2, lines 49-56) Shue et al. further discloses poly(phenylene sulfide) is the preferred polymer. (See Col 2, lines 56-61) Shue et al. discloses the reinforcements produced in this manner can be incorporated into a plastic and include carbon, glass, boron, silica, quartz, asbestos, mica and organic material. (See Col 1, lines 52-56 and 64-68) Shue et al. further discloses that the amount of polymer coating on the reinforcement after curing can vary widely. The invention is not limited thereto but it is contemplated that for most purposes the weight percentage of polymer coating will range from about 0.1 to about 10 weight percent. (See Col 3, lines 20-24) Therefore, examiner finds that there is sufficient suggestion in Shue et al. to modify the amount of polymer coating on the reinforcements. Shue et al. further discloses because of its availability and desirable properties (such as high chemical resistance, nonflammability, and high strength and hardness) poly(phenylene sulfide) is presently preferred. (See Col 4, lines 1-5) Therefore, one of ordinary skill in the art would have been easily motivated by the list of known properties and availability of poly(phenylene sulfide) to modify the amount used on the reinforcements in order to tailor the reinforcements for end product use. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges

by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Regarding claims 3, 12 and 15, Shue et al. discloses the reinforcements produced in this manner can be incorporated into a plastic to improve strength, stiffness, fatigue life and other properties of the plastic. Suitable plastics include both the thermosetting and thermoplastic types. (See Col 1, lines 52-56) Therefore, as the composition as claimed by Shue et al. et al. has been shown to encompass the components as claimed by applicant, it would have been well within the ordinary skill of one in the art at the time of the invention to incorporate the material into components for aircraft, automobile, machine, plant, and medical components since the type of plastic the coated reinforcements are incorporated into is not limited.

6. Claims 1-5 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 4,910,289)

Regarding claims 1, 2, 3, 4, 5, 13, 14, 15, 16 Harris discloses miscible poly(aryl ether ketone) blends wherein the composition contains (a) from about 98 to 99.9 percent by weight of a miscible poly(aryl ether ketone) blend with a polyetherimide, certain poly(amide-imides) and/or polyimides, and (b) from about 0.1 to about 2 percent by weight of a poly(phenylene sulfide) or a copolymer thereof. (See Col 1, lines 7-12) Harris also discloses that the discovery that such small amounts of the PPS additive (< 2 weight percent) are effective in promoting fast crystallization rates was totally unexpected. (See Col 4, lines 15-19) Harris discloses that enhanced properties include

strength and toughness as well as wear and abrasion resistance. (See Col 2, lines 37-40)

The compositions may also include reinforcing fibers such as fiberglass, carbon fibers, and the like. (See Col 22, lines 35-40)

While there is not an explicit amount of PPS taught relative to the reinforcing fibers, examiner has sufficient reason to believe that one of ordinary skill in the art would have been easily motivated to optimize the amount of reinforcing fibers included in the compositions thereby naturally tailoring the PPS relative to the reinforcing. One of ordinary skill in the art would have been motivated by manufacturing requirements for end product use of the composition to optimize the reinforcing fiber amount. Harris discloses the blend of poly(aryl ether ketone) and PPS may be fabricated into a coating or moulding. The blends may be fabricated into any desired shape and are particularly desirable for use as electrical insulation for electrical conductors. (See Col 22, lines 42-46) Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Regarding claims 12, Harris discloses the blend of poly(aryl ether ketone) and PPS may be fabricated into a coating or moulding. The blends may be fabricated into any desired shape and are particularly desirable for use as electrical insulation for electrical conductors. (See Col 22, lines 42-46) Harris discloses these compositions display excellent mechanical properties as well as excellent chemical and heat resistance. (See Abstract) Therefore, as the composition as claimed by Harris has been shown to encompass the components as claimed by applicant, it would have been well within the

ordinary skill of one in the art at the time of the invention to incorporate the material into components for aircraft, automobile, machine, plant, and medical components since the type of plastic the coated reinforcements are incorporated into is not limited.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is (571)270-3162. The examiner can normally be reached on Monday-Thursday, 8AM-5PM EST, alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

/ACS/
Examiner
5/20/09